



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,576	05/29/2001	Tadahiro Ohmi	P 281355 EL01019CDC	4482
909	7590	06/21/2004	EXAMINER	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			OWENS, DOUGLAS W	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

09/866,576

Applicant(s)

OHMI ET AL.

Examiner

Douglas W Owens

Art Unit

2811

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 02 June 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_.

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.


Claim(s) rejected: 1-8 and 40-47.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.

10. ☐ Other: \_\_\_\_\_

  
EDDIE LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

Continuation of 5. does NOT place the application in condition for allowance because: Applicant's arguments are not convincing. Applicant argues that the benefits of forming devices on wafers with (111) surface would not be appreciated by one of ordinary skill in the art. Applicant has sought to resolve issues with forming low temperature oxides on wafers with a (111) surface because of this desirability. Indeed, Applicant states in lines 6-10 of the discussion of the background art that it is desirable to form a device on (111) surfaces for the motivation cited in the Office Action. Although this specific motivation is not cited in the prior art applied, it is a known problem as evidenced in the admitted prior art.

Applicant argues that the mere fact that Ahn et al. forms a gate oxide in a high density Kr plasma is not an indication that Ahn et al. forms a silicon dioxide film containing Kr. Ahn et al. forms the gate oxide by microwave excitation of Kr plasma at a temperature of about 400 degrees C. The oxide of the instant application is formed by microwave excitation of Kr plasma at a temperature of about 400 degrees C. It is not understood how the identical method taught by Ahn et al. would result in a different oxide.

Applicant argues that there is no suggestion in the reference that an insulation film can be formed on a (111) surface of Si crystal. This is knowledge that is generally available to one of ordinary skill in the art, and also suggested in the admitted prior art. The problem has been in forming quality oxides because of the high temperatures required. Ahn et al. found a method of forming the oxide at a low temperature. Applicant argues that the assertion that the method of forming the silicon dioxide taught by Ahn et al. would have resulted in a Kr concentration that decreases from a surface of the silicon dioxide is a mere assertion. This is not an assumption, but based in fact, since the method taught by Ahn et al. because the method is identical to that of the claimed invention, which results in a Kr concentration that decreases from a surface of the silicon dioxide. Two identical processes would necessarily produce two identical products.

Applicant argues that Ahn et al. does not teach that the gate electrode is on the oxide film because of intervening layers, citing a dictionary definition of "on", which states that "on is used to indicate position above and supported by or in contact with: The vase is on the table". Note that the requirement of being in contact with is the alternative, position above and supported by is also a correct definition of "on". For example, a doily could be interposed between the vase and the table but the vase would still be on the table.